Bilge pumps and re-powering

Q: I suspect there is a leak in my bilge, but I do not spend all my time on my boat. It is very hard for me to know how often the pump is running. Are there any types of monitoring devices available?

A. Yes, there are a few monitoring systems available. Boats take on water all the time. Condensation, rain, waves or unknown leaks all add to the work of the bilge. Monitoring how often the bilge pump cycles (turns on and off) can help diagnose any problems.

Let's talk about basic bilge pump guidelines. Many mechanics and surveyors have mentioned that most boats do not have enough bilge pumps to begin with.

Using a hand pump or bucket is too inefficient and difficult to be reliable. An electric bilge pump can overheat and fail in extreme cases, or the regular bilge pump just becomes overcome by the amount of water. It is always good to have a backup bilge pump and, in some instances, it is best to have more than one backup bilge pump.

Mount the backup bilge pump in the same area as the main pump but in a slightly higher location. If the water level is actually overtaking the original bilge pump, the backup will operate indicating a problem.

If you operate a long-range cruiser, you should consider installing a third bilge pump that derives its power from the engine. (If you use an engine driven back up, as long as you can run the engine you will be able to remove the water.)

All that said, monitoring the pump operation and the integrity of the electrical system could be accomplished with something like the CycleStat, available from ESC Products Corporation www.cyclestat.com.

Other systems actually monitor when the pump turns on from mechanical movement or electrical switching. This type of system can be a problem. Wave action of the boat (or any type of movement) will cause a recording of the pump starting, even if it is not pumping water for any length of time. This will not give an accurate record.

To correctly record the cycles of the bilge pump the monitoring system needs to know when the pump turns on, but also that the pump was actually running for a period of time.

ESC Products has designed a unit that only records events that are longer than one-second duration. Their research indicates that the outlet tube would not be filled with any water if the pump runs for less than one second, so why record that short cycle? Unless you can listen to the pump yourself, this looks like the way to go.

Send your questions or comments to Scott Sky Smith at sky@skysmith.com

Dock Talk Q & A continued

Q. I am thinking of re-powering my boat. I currently have a gas engine. I have been hearing and reading about the benefits of converting to a diesel engine. Any advice?

A. Sure, do as much research as possible. Diesel engines have been power plants for trains, boats and trucks for years. They have an excellent history of power and durability. For years diesel engines were the only option for tractor-trailer rigs, recreational vehicle owners and in the large boat industry. There are even diesel engines installed in aircraft applications showing promising results.

In the past, fuel cost was the biggest reason to run a diesel. Now that the cost of diesel fuel has increased to within pennies of regular gasoline, diesel engines must sell on their other merits. Those merits include efficiency, low-end torque and longevity.

Diesels run at lower revolutions per minute (RPM), which results in better fuel efficiency and longer life than a gasoline engine. They can maintain their rated horsepower better and they do all of this without an electrical ignition system. However, they are usually heavier and more expensive. Typically, gasoline engines develop their horsepower at higher RPM's putting more wear and tear on the engine along with a higher fuel burn (less efficient).

For more information on re-powering from an owner's view, check out the following website, www.boatdiesel.com. While it might not answer all your questions, it will give you an idea of what other owners are doing.

It is also a good idea to contact a manufacturer such as Yanmar Marine at www.yanmar.com. The parent company of Yanmar, founded in 1912, "built the world's first commercially viable small diesel engine." Yanmar Marine has been in the Diesel marine engine business for many years. They offer several options for re-powering almost any size boat.

After you do the research, one thing you will probably discover is the economics of re-powering. Re-powering to a diesel can save you money in the long run. If your current power plant is worn and weak from age and many hours of use, re-powering might be the best way to go. Why overhaul an old worn out engine that might have parts availability problems and create reliability issues? If your vessel is underpowered and needs an increase in horsepower to handle a following sea without losing cruise speed, maybe a re-power is right for you.

On the other hand, if you were planning to trade boats in the next five years, I would put pencil to paper and make sure that the cost of the new engine will be a good idea. You might want to just trade boats instead.

Scott "Sky" Smith is freelance writer, columnist and the author of "Ultimate Boat Maintenance Projects" and "How To Buy A Single Engine Airplane" published by Motorbooks International, and the owner of an aviation and marine insurance agency.